

**APPENDIX B**  
**PENDING CLAIMS**

1. (thrice amended) An isolated nucleic acid encoding a polypeptide monomer of a pH sensitive potassium channel, the monomer:

(i) forming a potassium channel having a unit conductance of approximately 80-120 pS and having increased potassium channel current activity above approximately intracellular pH of 7.1, when the monomer is expressed in a *Xenopus* oocyte; and

(ii) encoded by a nucleic acid that selectively hybridizes under moderate stringency hybridization conditions to a nucleic acid comprising a nucleotide sequence of SEQ ID NO:2, 16, or 18, wherein the hybridization reaction is incubated at 37°C in a solution comprising 40% formamide, 1 M NaCl, and 1% SDS and washed at 45°C in a solution comprising 1x SSC.

4. (as filed) An isolated nucleic acid of claim 1, wherein the nucleic acid encodes SEQ ID NO:1.

5. (as filed) An isolated nucleic acid of claim 1, wherein the nucleic acid encodes SEQ ID NO:16 or 18.

8. (as filed) An isolated nucleic acid sequence of claim 1, wherein the nucleic acid has a nucleotide sequence of SEQ ID NO:2.

9. (previously once amended) An isolated nucleic acid sequence of claim 1, wherein the nucleic acid has a nucleotide sequence of SEQ ID NO:17, or SEQ ID NO:19.

26. (previously twice amended) An expression vector comprising a nucleic acid of claim 1.

27. (as filed) A host cell transfected with the vector of claim 26.

45. (previously once amended) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer having a calculated molecular weight of between 120-156 kDa, the molecular weight calculated from amino acid sequence.

46. (as filed) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer forming a homomeric potassium channel.

47. (as filed) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer forming a heteromeric potassium channel.

48. (previously once amended) An isolated nucleic acid encoding a polypeptide monomer of a pH sensitive potassium channel, the monomer: forming a potassium channel having a unit conductance of approximately 80-120 pS and having increased potassium channel current activity above approximately intracellular pH of 7.1, when the monomer is expressed in a *Xenopus* oocyte; wherein said nucleic acid selectively hybridizes under highly stringent hybridization conditions to a nucleic acid comprising a nucleotide sequence of SEQ ID NO:2, SEQ ID NO:17, or SEQ ID NO:19, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS and washed at 65°C in a solution comprising 0.2x SSC and 0.1% SDS.